I CLAIM:

1. A coil arrangement comprising:

a first conductive member; and

a second conductive member electrically coupled to the first conductive member,

wherein the second conductive member forms a segment that has an approximate shape of an arc when viewed along a direction of extension of the first conductive member.

2. The coil arrangement of claim 1, further comprising:

a third conductive member, which is positioned approximately parallel to the first conductive member, and which is electrically coupled to the second conductive member.

3. The coil arrangement of claim 2,

wherein the first conductive member is capable of receiving an electrical current,

wherein the second conductive member is adapted to pass the electrical current therethrough, and

wherein the electrical current exits through the third conductive member.

4. A coil arrangement comprising:

a first conductive member arranged along a first axis; and

a second conductive member arranged along a second axis which is approximately coaxial with the first axis;

wherein

the first conductive member is adapted to allow a first current to flow in a first direction, and

the second conductive member is adapted to allow a second current to flow in a second direction which is opposite to the first direction.

5. The coil arrangement of claim 4, wherein the first conductive member is offset axially from the second conductive member.

6. The coil arrangement of claim 5, further comprising a switch configured to dynamically control the offset between the first and the second conductive members.

7. A magnetic resonance imaging system comprising a coil arrangement comprising:

a first conductive member; and

a second conductive member electrically coupled to the first conductive member,

wherein the second conductive member forms a segment that has an approximate shape of an arc when viewed along a direction of extension of the first conductive member.

8. The magnetic resonance imaging system of claim 7, further comprising:

a third conductive member, which is positioned approximately parallel to the first conductive member, and which is electrically coupled to the second conductive member.

9. The magnetic resonance imaging system of claim 8,

wherein the first conductive member is capable of receiving an electrical current,

wherein the second conductive member is adapted to pass the electrical current therethrough, and

wherein the electrical current exits through the third conductive member.

10. A magnetic resonance imaging system comprising a coil arrangement comprising:

a first conductive member arranged along a first axis; and

a second conductive member arranged along a second axis which is approximately coaxial with the first axis;

wherein

the first conductive member is adapted to allow a first current to flow in a first direction, and

the second conductive member is adapted to allow a second current to flow in a second direction which is opposite to the first direction.

11. The magnetic resonance imaging system of claim 10, wherein the first conductive member is offset axially from the second conductive member.

12. The magnetic resonance imaging system of claim 11, further comprising a switch configured to dynamically control the offset between the first and the second conductive members.

13. A method of providing a coil arrangement comprising:

providing a first conductive member; and

providing a second conductive member electrically coupled to the first conductive member,

wherein the second conductive member forms a segment that has an approximate shape of an arc when viewed along a direction of extension of the first conductive member.

14. The method of claim 13, further comprising:

providing a third conductive member, which is positioned approximately parallel to the first conductive member, and which is electrically coupled to the second conductive member.

15. The method of claim 14,

wherein the first conductive member is capable of receiving an electrical current,

wherein the second conductive member is adapted to pass the electrical current therethrough, and

wherein the electrical current exits through the third conductive member.

16. A method of providing a coil arrangement comprising:

providing a first conductive member arranged along a first axis; and

providing a second conductive member arranged along a second axis which is approximately coaxial with the first axis;

wherein

the first conductive member is adapted to allow a first current to flow in a first direction, and

the second conductive member is adapted to allow a second current to flow in a second direction which is opposite to the first direction.

17. The method of claim 16, wherein the first conductive member is offset axially from the second conductive member.

18. The method of claim 17, further comprising the step of dynamically controlling the offset between the first and the second conductive members.

19. A computer-readable medium for operating a magnetic resonance imaging system comprising a coil arrangement of claim 2, the computer-readable medium having a set of instructions operable to direct a processor to perform the steps of:

permitting the first conductive member to receive an electrical current,

permitting the second conductive member to pass the electrical current therethrough, and

permitting the electrical current to exit through the third conductive member.

20. A computer-readable medium for operating a magnetic resonance imaging system comprising a coil arrangement comprising a first conductive member arranged along a first axis and a second conductive member arranged along a second axis which is approximately coaxial with the first axis, the computer-readable medium having a set of instructions operable to direct a processor to perform the steps of:

permitting a first current to flow in a first direction in the first conductive member; and

permitting a second current to flow in a second direction in the second conductive member, the second direction being opposite to the first direction.

21. The computer-readable medium of claim 20 wherein the first conductive member is offset axially from the second conductive member.